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The Future of Cities and The Future of Man

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It is our hope that our readers will take a more active part in COMMUNITY COMMENTS. We plan to do an issue in the near future composed mainly of articles contributed by our readers. We would also like to add a 'Letters to the Editor' section as a regular feature. We look forward to your letters, opinions, articles, and suggestions.

THE FUTURE OF THE CITY AND THE FUTURE OF MAN

by Griscom Morgan

Controversial issues about simple matters of fact can have a profound influence on society. Is the earth round or flat? Columbus and Magellan found out. Who had the right theory about genetics--Mendel or Lysenko? Is population control a social necessity? In their time each of these have been vital political and practical issues of fact.

Today an issue of comparable importance is the question whether the large metropolis is a viable and enduring place for human beings to live. Governments and corporations are now spending and planning to spend billions of dollars on the development of new cities for hundreds of thousands of inhabitants and for renewal of old cities with the expectation that modernized versions of the large city can be made good places to live. During the past few years deterioration of cities and biological evidence of harm from large population groupings of lower animals has begun to shake this expectation.

Community Service, in the 36 years since its inception, has pioneered in concern and study of this problem. The current literature and debate on large city development needs to be reviewed and commented on from the standpoint of our information, to see what light it has for us and what light we have to bring to it. In this issue of Community Comments we review some leading current literature and publish Community Service staff studies on the long range effects of large city living.

These matters are of particularly great import for the future of mankind since the base of much rural population is being actively destroyed by our economy, by our educational system, and by the use of natural resources for modern urban civilization.

At the annual meeting of the American Association for the Advancement of Science almost three years ago an international symposium of scientists presented papers on the effects of population density and crowding on lower animals and human beings. These have now been published.[1] Before the symposium, participants had an interview with newspaper correspondents. When the correspondents asked if the harmful effects of large population groupings such as large cities could be corrected by

modern technology, not one answered affirmatively. However, Ulla Olin, demographer for the United Nations development program, remarked on the fact that large cities helped limit excess population because "second generation urbanites have lower fertility."[2] The chairman of the panel summarized its consensusin remarking "I think we agree that, ultimately, (population) limitation will be occurring in the cities: but the point at hand is how much deterioration of health and behavior might prevail before this limitation occurs."

The AAAS symposium's evidence was not hopeful for those people who were committed to the large metropolis. It was to be expected that sooner or later a scientific case would be made for large city living. Now such a study has been financed by a Ford Foundation grant and carried out by a group of scientists including Paul Erlich and Jonathon L. Freedman. This study, reported in the New York Times[3] and Psychology Today[4] presents evidence suggesting that population density in itself does not have a significantly harmful effect on man.

In Psychology Today Jonathon Freedman's article "A Positive View of Population Density--The Crowd--Maybe not so Madding After All" begins with a review of some scientists findings of the effects of crowding of animals and asserts that where the factors causing harm from crowding were isolated it was found that "the number of animals interacting is the crucial factor that produces the effects, rather than the density of the population." We may observe here that some other studies do not bear this out.[5] Thus Kenneth Myers observes in regard to crowding of rabbits "The effects of crowding are most severe when living space is decreased."

Freedman proceeds to survey experimental and documentary evidence about crowding of human beings. He tells of a study by H.H. Winsborough who isolated individual causes for deterioration in urban environments and showed that "with economic, educational, and migration levels eliminated, density actually seemed to be associated with less disease, less morbidity, and less need for public assistance."

> "Israel Pressman and Arthur Carol studied the relationship of density, net migration, percentage of non-white people and median family income to crimes against persons and property in the largest metropolitan districts in the United States. With other factors controlled, they reported no relationship between density and crime . . . "

However, cities are wholes, and the patterns of separate parts must be related to the whole.

Freedman, Erlich, and their associates investigated the effects of population density "to find out how crowding effects human beings." Impaired performance of simple and complex tasks was used as one of their measures of the adverse effects of crowding. For example, they placed groups in high and low density rooms and studied people's responses to such environmental conditions. Noteworthy was difference in response between the sexes when crowded in a small room. Men performed more poorly and women better, whereas in a mixed group effects of density disappeared. On the basis of this study Freedman states,

> "I would guess, (and it is only a guess) that density per se is not particularly detrimental to human beings. The other factors that tend to accompany crowding are, of course, very serious. High concentration of people in one spot, or the existence of too many people in the world as a whole, causes problems in terms of food supply, puts strains on natural resources, causes pollution and so on. But given a certain number of people in the world we can ask whether it is more harmful to have them concentrated in certain areas than to spread them more or less equally over the liveable areas. I suspect it is not."

A wider range of data and better tools for observation might lead to a different conclusion. For example, Barney McCaffrey in reporting on his visits among communes in Europe and America observed that a number of those that had succeeded in enduring had found that for the group to both live and work together in the same house created too great tensions, that they should either live together and work separately or live separately and work together. They needed relief from being together too long. Among people experimenting with commune living we have had many reports of groups who found that living too close together in one building over a long period of time resulted in progressive build-up of tensions to the point that they had to break up. Freedman's experiment with a group crowded during a limited period of time omitted this consideration. Those more well-to-do people who live without crime in dense quarters in the large city may be those who can get away from the city over the weekends or on summer vacations, whereas the less priviliged generally cannot. Among lower animals, crowding that may be endurable for a limited period of hours or days or for certain phases of life may not be endurable as a permanent condition. This subject is studied in a paper given at the AAAS meeting by David E. Davies, "Physiological Effects of Continued Crowding."[6]

The impact of excessive density among animals tends to be reflected in fighting. We should expect to find evidence of more fighting with greater density of cities if density itself is a cause of stress. This is precisely what population figures reveal. Data from the Metropolitan Area Statistics of the Census Bureau reveal that among the metropolitan cities of northern United States with population in excess of a quarter million, the rate of murder and manslaughter averages more than twice as great among the fourteen cities with density above 900 per square mile than in the fourteen such cities with density below 250 per square mile. In contrast, the rate of crime in general of the more dense cities was only half again as great as that of the less dense cities, indicating that violence particularly results from crowding. Among metropolitan cities below a quarter million in population cities with density above 350 per square mile had half again the rate of crimes against persons compared with cities of density less than 200 per square mile. (Details on rates of murder were unavailable.) Data in greater detail are given in an appendix.

Freedman picks out one concomitant of crowding that he and Erlich believe to be harmful to man:

> "whereas density is not important, there is evidence from both animal and human research that substantial effects may be due to the absolute number of individuals who must interact . . . I am suggesting that the number of individuals who must interact, rather than density, is the variable that produces substantial effects on human behavior."

We might observe here that large numbers of people in interaction is the essential condition of a large city, the more so the greater the density.

In conclusion Freedman asserts that "we should not be surprised to find our great cities continuing to function despite tremendous crowding . . . Perhaps the problems are due largely to economic and racial strains and to inefficient and sometimes irresponsible use of the available resources . . . Perhaps the positive effects such as interstimulation and feelings of intimacy and excitement balance the difficulties of getting downtown . . . and the problems of walking comfortably on crowded sidewalks . . . This is, of course, highly speculative and I say it as one who loves big cities."

Mr. Freedman thus reasons from his theory to practical implications in his defense of the large city.

In the study of biological effects of crowding on animals, since its beginning in the work of Clyde Allee, a crucial influence has been found to be the size of the group within which social interaction is focused. Small groups, such as flocks of chickens, have been universal units of survival among higher forms of animal life. This group life is disrupted or destroyed by too great numbers in an area. Social interaction within the primary group or small community depends on people knowing each other and attaining security and dependability of relationships. The large city with its mobility and impersonality (one study showed that in New York the average family moved frequently) tends to disintegrate such community life, just as the excessively large group does among lower animals.

Erlich and Freedman fail to recognize the importance of small social groups in the establishment of healthy interpersonal relationships. They point out that the problem is not necessarily density, but rather the number of people with whom they must interact. Yet they do not make the important and obvious connection that when living in the large city it is extremely difficult, if not impossible, to avoid anonymous interaction with literally overwhelming numbers of people. Not only that, but the large population can also hinder interaction that is important. The larger the student body, the fewer the friends children have in school.[7] In a small town one knows the mayor, the city councilman, the chief of police. In the large city a personal interaction with these figures of law or authority is impossible. An individual comes to feel that he has little control over his life and none over the place where he lives. He tends to feel insecure or hostile and may react in ways that can lead to a disintegration of the social structure. In the small community this needn't happen. By virtue of the smaller size each person can have the satisfaction of being listened to and having influence and responsibility.

The small community function is as essential to successful living in the metropolis as it is in rural areas. Just as the Amish and Hutterites have avoided the social and economic disintegration of their society by maintaining rigorous isolation from mass schooling and the mass economy, so a few urban cultures have been able by similar means to survive unimpaired in large city environments. This has been accomplished by a rigorous isolation from the surrounding urban society in small village-like communities which limit interpersonal relationships and maintain independent culture, economy, and way of life. This has been true of the Surashtra sect within the modern Indian city of Madura.[8] They even have their

independent courts and tax system. Where the Surashtras dropped their isolation they too became subject to the characteristic impairment of large city living. Robert Atchley of the Scripps Institute informed the writer that the Italian population in Boston is in the same category of effective survival in the urban environment. The Black Muslems have been able to maintain a good morale and quality of livng in the ghetto by virtue of their coherence and isolation from the surrounding mass society.

This aspect of successful accommodation to urban living is not limited to such extremes as isolated religious or ethnic sects, but in lesser degree characterizes other people in American cities who have managed to maintain health and sanity. Such is the finding of a study by Harvard sociologists Zimmerman and Cervantes.[9] They show that the greater the social dislocation of the surrounding society the more severely the small groups of families must reject and isolate themselves and their members from deviant culture and behavior if they are to avoid deterioration.

In the New York Times article on their research, Erlich and Freedman appear oblivious to these considerations. In the conclusion of their article they write "For the moment, since the evidence does not support the former ideas (of the harmful effects of urban crowding) and actually suggests that crowding may not always be so bad, let us take a more optimistic view of our urban problems. Let us concentrate on solving the economic and logistic problems rather than writing off the cities."

On the basis of this kind of reasoning, billions of dollars in urban redevelopment and new city building are to take place within the next few years. This reasoning requires careful analysis.

A very different study of crowding is one by Charles H. Southwick, professor of pathobiology at Johns Hopkins University, published in the March 1971 Ohio Journal of Science.[10] Southwick was chairman of the AAAS panel mentioned at the beginning of this article. He points out that crowding "is very much a psychological and ecological phenomenon, and not just a physical condition." For example, with rats,"Crowding is often accompanied by a breakdown of normal territorial behavior and an upset of dominance hierarchies which were formerly stable. These changes in turn lead to increased social contact and irritation... females no longer maintain good nests, nest construction breaks down, and young are poorly cared for."

"Still other types of deviant behavior found in crowded rodent populations include inappropriate sexual behavior, often misdirected in regard to sex and age, and social withdrawal."

Southwick goes on to draw a parallel with human populations in large cities.

"By the year 2000, it is predicted that 80 to 90% of our populace will be living in urban areas. In construction and urban development, we are devouring 4,000 acres per day in the United States alone.

"The story is similar throughout the world . . . Cities throughout the world are on the verge of financial collapse as their wealth tax base moves outward and poverty-stricken components of the population pour inward."

Mr. Southwick points out that the cause of this migration "is more likely to be found in the realities of modern economics: the prospect of a job or welfare payment."

Erlich and Freedman defend the large city by their argument that it is not density of people in a specific area but poverty and the number of interpersonal relationships that makes city dwelling harmful. Yet, the large city is particularly characterized by a proliferation of interaction among people with whom one has no personal acquaintance. This kind of anonomous relationship is known to result in breakdown among lower animals. Southwick shows the implications of this situation in our cities:

"A recent article by the psychologist Stanley Milgram (1970) pointed out that a resident of suburban Nassau county, outside of New York City, can meet a potential of 11,000 other people within a ten minute radius of his office . . . in midtown Manhattan, he can meet fully 220,000. Thus the inner city dweller has a potentially vast and oppressive number of social contacts with which to deal. City life, Dr. Milgram points out, constitutes one continuous set of encounters with sensory overloads. . . One adaptive response is to ignore and filter out. . . He obviously does not greet or acknowledge each person he passes on the street; . . . he may even ignore crises, or may stand idly by when some other person is in danger or distress . . . But it is obvious that even these adaptations are not enough.

". . . In the famous midtown Manhattan study of the 1950's entitled Mental Health in the Metropolis, Dr. Thomas Rennie and his colleagues showed that 80%

of the people interviewed had detectable psychiatric disorders, and 25% of them had significant neuroses that made them indistinguishable from patients in mental hospitals . . .

". . . Dr. Ian McHarg (1969) and his colleagues at the University of Pennsylvania have also shown the increased prevalence of behavioral pathologies in the inner city environment. Not only mental illness, but various patterns of criminal assault, murder, rape, alcoholism, and drug abuse are also intensified in the inner city ghettos."

Southwick recognizes that these factors are not simply reducible to the effects of crowding per se, but urges

"this need not mask the essential significance of the syndrome--the reality of a package of related problems or a constellation of symptons which seem to occur together in the recognizable form of what we might call the 'inner city syndrome'.

". . . Thus to the ecologist, planning for the future must direct itself to the basic issues of population and urbanization."

To a degree Southwick's article serves as an effective commentary on the Erlich-Freedman study. But there are a number of crucial aspects of the problem which neither Southwick nor Freedman mention. Particularly important is the effect that the stimulous of association with large numbers can have over a long period of time. The stimulation that Freedman notes as being a good feature of the large city is cumulative in its effect on the neuro-endocrine system. One generation may flourish on it, stimulated to better production under its influence. The next generation may succeed on the impetus of the parents accomplishment. The third generation tends to be more exhausted from the cumulative impairment of personality. This sequence of cumulative influence from crowding and urban living has been documented for both animals and for man.[11]

Still another aspect of the effect of large city living that needs to be taken into account is variation between individuals in vulnerability to urban stress. This has been documented for lower animals in a study of the influence of barnyard living on wild turkeys.[12] The beauty, sensitivity, and vitality that made the wild animals greatly superior to domesticated ones was found to make them vulnerable to being killed by the stress circumstances of the barnyard; their sensitivity led to overactivity, exhaustion, and a high mortality. If we should breed out comparable

qualities in human beings we would have the condition stated by Ralph Chapman: "But rather mourn the apathetic throng, the cowed and meek who see the world's great anguish and its wrong and dare not speak."[13]

At this time of crisis of the cities it is well to take into careful consideration the warning of Thomas Jefferson written to his friend Dr. Benjamin Rush: "I view great cities as pestilential to the morals, the health and the liberties of man. True, they nourish some of the elegant arts, but the useful ones can thrive elsewhere, and less perfection in the others, with more health, virtue and freedom would be my choice."

Since writing this article we received a "Selected Bibliography on Crowding" by Robert McPetty, Department of Psychology, University of Illinois, Council of Planning Librarians, Bibliography #240. P.O. Box 229 Monticello Ill.

Neither Southwick's article nor the book Behavior and Environment were included in this survey. One study particularly relevant to our own is R.C. Schmitt's "Density, Health and Social Disorganization" in the 1966 Journal of the American Planners 32 (1), 38-40. This distinguishes between density and crowding. Density is defined as the number of houses per acre, and crowding was defined as the number of occupants per rooms in houses. The finding was that "with crowding held constant, density still was related closely to morbidity, mortality and social breakdown, whereas with density held constant, neither crowding, educational level nor income was related to any measure of social disorganization." The conclusion is that doubt is cast on the conclusion reached by some researchers that density is not related to social ills."

This study by Schmitt confirms Freedman's and Erlich's evidence that crowding (a condition often present even in a village) is not harmful, but gives density (an intrinsic condition of large city living) as an independent and harmful variable, thus disproving the Erlich-Freedman thesis that "density per se is not particularly detrimental to human beings.

An article by H.R. Lantz in Sociology and Social Research is among other that confirms the harmful effect of large city living. It correlates mental illness in the air force with the size of population of home towns. The conclusion is that "the general pattern is fairly consistent and is suggestive of a greater degree of mental health for persons reared in sparsely settled regions."

APPENDIX

We list below crime rates for cities of low and of high density over a quarter million in population, omitting those cities south of the Mason-Dixon line, except for Tucson, Arizona, largely settled by northerners. Taken from the Metropolitan Area Statistics reprinted from Statistical Abstract of the United States, 1969, U.S. Bureau of the Census.

14 high density cities with density over 900 per square mile

City	Murder per 100,000	All crimes known to police per 100,000
Bridgeport, Conn.	2.9	2,276
Chicago, Ill.	10.7	2,458
Cleveland, Ohio	9.6	2,251
Detroit, Mich.	11.0	3,612
Hartford, Conn.	3.0	2,218
Jersey City, N.J.	5.6	2,273
New Haven, Conn.	2.0	2,402
New York, N.Y.	8.5	4,734
Newark, N.J.	8.2	3,520
Paterson, N.J.	3.5	1,828
Philadelphia, Pa.	6.7	1,569
San Francisco, Ca.	7.7	4,666
Trenton, N.J.	6.2	3,076
Milwaukee, Wisc.	3.9	1,719
	89.5	38,602

14 low density cities with density below 250 per square mile

Binghamton, N.Y.	1.0	1,025
Duluth, Minn.	2.8	1,569
Harrisburgh, Pa.	5.6	1,028
Huntington, Ky.	5.4	1,418
Johnstown, Pa.	.7	419
Lansing, Mich.	2.5	2,570
Portland, Ore.	3.9	3,073
Spokane, Wash.	2.0	1,841
Syracuse, N.Y.	3.1	1,902
Tacoma, Wash.	3.9	2,224
Tucson, Arizona	2.6	2,502
Wichita, Kansas	5.5	2,155
York, Pa.	3.8	899
Utica-Rome, N.Y.	1.1	712
	43.9	23,337

The foregoing data are based on the Bureau of the Budget definition of metropolitan statistical areas. Quoting from the bulletin:

> "a metropolitan area is an integrated economic and social unit with a large population nucleus. Each metropolitan area contains at least:
>
> a) one central city with 50,000 inhabitants or more, or,
>
> b) two cities having contiguous boundaries and constituting, for general economic and social purposes, a single community with a combined population of at least 50,000, the smaller of which must have a population of at least 15,000.
>
> The "SMSA" or statistical areas, includes the county in which the central city is located and adjacent counties that are found to be metropolitan in character and economically and socially integrated with the county of the central city."

That correlation of density with average crime is paralleled with the size of city is demonstrated by comparison of all crimes known to police among northern and western cities between twenty cities above a quarter million in population and twenty cities below a quarter million in population. An average of approximately twenty one crimes per thousand in the larger cities contrasts with seventeen crimes per thousand among the small cities, which is approximately a quarter again as many crimes per thousand in the larger cities as compared with the smaller cities.

We have limited consideration to northern cities because southern cities with higher crime rates are disproportionately smaller and their inclusion would skew the evidence.

FOOTNOTES

1. Behavior and Environment, edited by Aristide H. Esser, Plenum Press, New York, 1971, pp. 208-216.

2. Quotation from Associated Press report, December 30, 1958. The author was a member of the panel.

3. New York Times, Saturday, September 11, 1971, page 27.

4. Psychology Today, September, 1971.

5. "The Effects of Varying Density and Space on Sociality and Health in Animals" Myers, Hale, Mykytowycz, and Hughes, p. 148 in Behavior and Environment.

6. Behavior and Environment, p. 133.

7. Carol M. Larson, "School Size as a Factor in the Adjustment of High School Seniors", 1949, The State College of Washington.

8. Arthur E. Morgan, "The Surashtras of Madura: A Self-Sustaining City Population" Community Service News, September-October, 1949.

9. Zimmerman and Cervantes, Successful American Families, Pageant, New York, 1960.

10. Ohio Journal of Science, Bowling Green State University.

11. See other article in this issue.

12. Richard Gerstell and William H. Long, "Physiological Variation in Wild Turkeys," Research Bulletin, No. 2, Pennsylvania Game Commission, 1959.

13. From a poem by Ralph Chapman.

REQUIRED--A NEW ORDER OF URBAN DEVELOPMENT

by Arthur E. Morgan

For about the past four thousand years or more, the human race has been undergoing a repetition on a similar course. A concentration of military power, wealth, or industry, or all of these together, brings about centers of population--our cities. People from rural areas, especially the more intelligent and vigorous, have migrated to the cities to share the greater wealth and other advantages.

Such movement has continued until the contributing rural areas have been stripped of their best population. Then the large cities have faded away, sometimes because of war and disease, because of social degeneration, or because of the low birthrate in the city. In this way, during the course of a few centuries, the populations of large cities have largely disappeared and the culture of the area has faded.

Then in time perhaps new populations have come and the process is repeated. Sometimes no new population appears and what was a large city becomes a jungle. In some of the jungles of Southeast Asia are the remains of palaces and temples, but with no present population. The great Inca cities of Peru are now nearly empty. In Central Asia there are empty remains of great cities. The new cities nearby are not populated by the descendants of those who built the earlier cities, but are of a new migration.

A number of the temples of Ancient Greece have disappeared because new arrivals found these temples standing empty and tore them down to use the marble for lime. The massive arena and other vast buildings of Rome, built when Rome was a city of a million people, lay crumbling for centuries when Rome had shrunk to a small town.

In the Middle East are many piles of rubble, masonry or vacant temples--the remains of ancient cities and once thriving cultures.

Most cities of modern India are of recent origin. Virtually the whole population of Bombay are migrants or descendants of migrants who entered the city during the past century.* The same is true of Calcutta.

* Migrants in Greater Bombay, K. C. Zachariah, Association Publishing House, 1969.

When Cortez invaded Mexico, he found a large city, but it had not been built by its Aztec inhabitants. Its great pyramids go back to an older population, the Toltecs, who were then only a vague tradition.

Most of the large cities of Europe today are not continuations of the great cities of the past, but are recent emergences during recent centuries. The few great cities which have survived many centuries are long time national centers. Istanbul was the head of the Catholic world for more than a thousand years, and then head of the Moslem religion. Rome was head of the Roman Empire and for centuries of the Catholic Church. London, Madrid, and Paris survived as national capitals. These are the only large European cities which have had populations of about ten thousand for more than five hundred years.

The common course of greatness was illustrated by the Moslems. The outstanding personality of their culture was Ibn Khaldun who knew the vast Moslem culture from the Atlantic to the Persian Gulf, including large cities from Madrid to Babylon. As Khaldun described the process, the cities grew in size and power as the more intelligent and abler people of the small communities migrated to the cities to share their prosperity and culture. He said that a city family lasted about four generations before the family became extinct. As the city families died out in about four generations and as the replacement supply of people with intelligence and energy in the small communities became exhausted, the Moslem culture which had fed on the last of the Greek culture, became exhausted. The Moslem civilization of today is from new migrations.

The metropolis is not the answer to the human need. But neither is the old time small town the answer. The small town of the past has two faults. One is lack of inquiry and curiosity. Primitive life was traditionally conservative. The way primitive man had for preserving arts and ways of life, was to follow the prevailing practice, depending on personal communication. Arts and attitudes changed slowly. The safest course was to act in the accustomed way. Conservatism was good practice and good morals. Today, with progressive change being the recognized way of life, creativity, invention, inquiry and research are in the ascendant and their location has been the large city.

The other limitation was that the small town got mostly limited views of life. Activity and outlook were largely limited to the major activity of the community. The church, and later the school, were common to most communities. Otherwise the arts and interests of life were largely limited to the major local occupation. Until the end of the nineteenth

century in America the major interests of the small community were farming, fishing, quarrying, railroad division activities, and lumbering. Even the local college tended to reflect the prime occupation of the community. Other interests were few. For a full life, one went to the metropolis.

The habit of going to the city had two limitations. The more intelligent and energetic people went to the city because it is where both culture and wealth were concentrated. And the birth rate was lower in the city. The ablest families from the villages went to the city because of the superior wealth and culture. This custom impoverished the villages. There is still much quality in our small communities, but it is not unlimited.

The fact is that civilization has not yet learned how to maintain and increase the proportion of creative and adequate people. For deep seated biological reasons, which are described elsewhere in this issue, great concentrations of population do not maintain themselves and with the existing social habits, the smaller communities to not indefinitely withstand the departure of their best and most spirited men and women.

Man has not learned how to manage populations and cultures. Is it possible that there are arts of living that we have not yet learned?

Is it not possible for a few well selected small communities to unite in seeking a better form of community life for themselves and for the country? There are many men and women who want to find better ways of life, ways other than the ones that seem open to them. Cannot such small communities and such people find each other? Cannot discriminating people develop living conditions where it is actually feasible to live by principles of action which in everyday life are commonly violated or ignored?

How many people are there in American industry and labor who are living under what they consider to be a standard condition of employment, yet they are not being honest, though they would prefer to be so? How many secretaries are there who have written letters of falsehood, when they would have preferred to be honest? How many salesmen lie to their customers because the trade demands it yet wish they could sell with honesty what they could believe in? How many union employees restrict production below a reasonable norm because the union or fellow workmen seem to make it necessary? How many employers are dwarfing their own lives and the lives of their employees because they think they must follow standard industrial practices?

Would it be possible to develop new communities or to revise old communities of good quality in which it would be possible and normal to act with honesty and fairness, ignoring, if necessary, some conventional patterns of industry and seeing employees as friends and associates? Would it be possible for teachers in a local school system to welcome carefully considered new ideas and relationships with students and parents? Would it not be interesting to live and work in such a community?

An attitude of inquiry, expectation and of willingness to try, especially in cooperation with ones associates, can have unexpected results. It is the old attitudes and habits of the mind which make the desirable results seem improbable. If ordinary persons, such as you and I, can maintain a quality of integrity and of fellowship, if we are willing to make the best of the circumstances, we may find ourselves growing into a favorable society for such values.

Human society is the product of the working out of aims and purposes. We may so define and develop our purposes so that we arrive at the wisdom, beauty, harmony and growth which is possible of humanity. In some respects, this is the major task of society. Men do not arrive at social harmony and efficiency by drifting, but by working at it with full capacity and good will. The quality of life is measured by the energy, the motives and the persistence with which we act.

All of our circumstances and our special loyalties tend to get their significance from what to us is the meaning of life. Drifting with the tides of popular interest, without purpose and control, our lives may be only a sucession of chance occurances with no overall continuing meaning. Each community in America is surrounded by other communities with somewhat different standards and there is a constant tendency for it to be affected by them. Also its own values and standards will be constantly influencing others. Such is the course of human society. Whether that course it upward or downward will depend on the wisdom, aims and spirit of those who participate.

Each community has its own measure of integrity, good will, commitment, and vigor of spirit. Such qualities, including its environment, will determine whether it is a good place to live and what contribution it will make to the emerging human culture. A reasonable amount of foresight and commitment may have significant effect on the outcome, for those who participate and for coming generations.

HINTERLAND AND METROPOLITAN POPULATIONS AND AMERICA'S FUTURE

By Griscom Morgan

The trend toward concentration of population into metropolitan centers has long been assumed to be the way of the future. This is the prediction, for example, in Don Bogue's The Population of the United States, a leading book on present day demography. During the past few years while deterioration and pathology have been rapidly increasing in America's cities there has been widespread expectation that the cause of this decay can be corrected and that man will continue to concentrate in larger and larger urban conglomerations.

A generation ago Warren Thompson of the Scripps Foundation for Research in Population Problems, wrote that:

> "in the western world as now organized, all the evidence indicates that no urban population of 100,000 or more, and probably even in cities of over 25,000 will long continue to reproduce itself. The human animal is not reproducing in our modern cities . . . any civilization that thus sterilizes or nearly sterilizes a large part of its population cannot possibly long endure. Its values are personal rather than racial or social. They leave out of account the needs of the race and the establishment of continuity in family and community living."[1]

The high birthrates of our large cities following the second world war, with its heavy immigration to cities of veterans and rural people, seemed to discredit Warren Thompson's warning. Now for more than a decade birthrates in larger cities have been declining more rapidly than ever before. The reason for this decline of birthrates among people who have lived for a time in large cities has seldom been adequately understood. Population studies have been largely statistical, with biological and historical factors inadequately considered. Statistical correlations such as those between education and birthrate did not yield much insight.

During the forties and fifties we at Community Service made inquiries to see if we could find record of any human population that by its own birthrates had, without dependence on immigration long survived highly urbanized living. All but one of the leads that had turned up suggesting such an

urban population proved to be cases to the contrary.[2] The one exception, the Surashtras of Madura, India, reinforced the rule, for they are a minority group scattered in small communities over the city that had maintained rigorous isolation from the surrounding urban society and culture. Neither factors of sanitation, nor nutrition, nor the unavailability of contraception seemed to be the controlling reason for their success.

As we carried through this study we became more and more impressed with another factor that has almost completely escaped the study of demographers and sociologists but which has been given attention by biologists in the study of the effect of crowding on lower animals and human populations. A superficial understanding of genetic heredity had led scientists to believe that there was no carry-over of environmental impairment from generation to generation because genetic characteristics are reletively constant. Consequently, with the assumption that each generation began with a fresh start so far as biological inheritance is concerned, only the immediate generation-long influences were given consideration and study. That there might be cumulative environmental influences from generation to generation has almost been beyond consideration.

There is no scientific reason for believing that genetic factors are the only form of biological inheritance. No one would argue that a baby born of a mother long sick, starved and exhausted from stress would have as good a start in life as one born of a sturdy, stable, well nourished woman in excellent health. The harm from a poor beginning during pregnancy may be largely compensated for by prolonged good care during childhood, but it is one factor added to others to impair the prospect of wellbeing. The nearer to the beginning of life that a harmful influence occurs, the more deepseated its effect. Thus a pregnant mother's taking the drug thalidomide may seriously afflict for life the physical prospects of the growing person. This puts in the simplest and most indisputable terms the reality of non-genetic biological influence from the mother, even though there is no genetic impairment to her children.

The sum total of many harmful environmental impairments over a lifetime can cumulate in terms of declining health of body and mind to the point that the third generation has a significantly poorer start in life than the second or first.

During the nine months between conception and birth the fetus is receiving physical non-genetic inheritance from the constitution of the mother. And during childhood a human being receives the nurture necessary to life and development. The importance of this nurture is demonstrated by one of the most unexpected of the discoveries in child rearing that upset a major trend in technology of child care.

About two generations ago it was assumed that infants should thrive on good food, good sanitary environment and good clothing. When institutionalized with these conditions of life well supplied, the mortality rate among children was high. It came to be realized that tender, loving care was essential to the life and development of the infant and child; this is also needed for other mammals. Thus in human development we are involved not only with genetic traits passed from generation to generation, and the biological relationship of the fetus to its mother, but also with a highly complex and little understood nourishment of the personality through human interaction. If the human interaction is inadequate or poor, the offspring's entire organism and capacity to reproduce will be impaired.

Physical and psychological factors of nurture are thus interwoven into one psycho-somatic biological whole. Furthermore, social deterioration in society tends to be relected in mental and physical disease, as Dr. James Halliday reported his book, Psychosocial Medicine.[3] The social heritage is truly part of the biological inheritance that when deeply depleted can be corrected only with difficulty and long endeavor.

I outline these ascertained, determined facts only to show that we may not limit ourselves to genetic considerations in the biological capacity for survival and effective reproduction of subsequent generations.

We have increasing evidence in the effect of large cities upon populations that the longer a population is within the large city complex, the more severely it is adversely affected by highly urbanized living, not only on a short term basis, but also in the course of several generations.

Jack London in his The People of the Abyss documents this about people in the east end of London, England. He found second generation people stunted and few had grandparents born in London. Dr. Sapur Faredun Desai, a prominant Parsi scientist in his book, A Community at the Crossroads[4], reported

the evolution of the affluent Parsi people of Bombay, India, where a progressive decline was clearly evident. After several generations of urban living, according to Dr. Desai, "quantitatively the Parsis are dwindling; qualitatively there is indirect evidence to show that they are on the downgrade . . . a once great race has begun to show lesser vitality than ever before; they are prey to various mental, physical, and social ills."

Simultaneously, one study after another is proving that lower animals follow the same pattern of behavior as we have found in regard to human beings, as they are affected by crowding equivalent to that of human beings in large cities.

In the February, 1962 Scientific American a lead article is entitled "Population Density and Social Pathology," with the subtitle, "When a Population of Laboratory Rats is Allowed to Increase in a Confined Space, the Rats Develop Acutely Abnormal Patterns of Behavior and Even Lead to the Extinction of the Population". The author of the article, John B. Calhoun, writes,

> "The data for the present discussion comes from the history of six different populations of rats. Each was permitted to increase to approximately twice the number that experience had indicated could occupy the available space with only moderate stress from social intereaction. The consequences of pathology were most apparent among the females. Many were unable to carry pregnancy to full term or to survive delivery of their litter and even greater numbers fell short of the maternal functions. Among the males, the behavioral disturbances ranged from sexual deviations to canibalism and from frenetic over-activity to pathological withdrawal."

It is fairly well established that excessive concentrations of population adversely affect mammals through forms of stress and over-stimulation. The February, 1964 Bulletin of the Atomic Scientists carries an article by Dr. Hudson Hoagland entitled "Cybernetics of Population Control". In this he refers to a 1939 study of animals affected by overcrowding, particularly among jack rabbits.

> "The adrenals were hyper-trophied in some cases, atrophied in others. Such signs, liver disease, hypertension, arteriosclerosis, adrenal degeneration, are typical of the acute stress syndromes that result from over-activity of the pituitary adrenal axis. Studies of rodents showed that after the severe stress of winter crowding when urban population densities were high, there was much fighting among the males, sex drives were low-ebbed, the young were often eaten, and the females produced premature births . . .After such a colony has been depleted in numbers the colony then tended to build up again. So it goes in repeated cycles of growth and decline.

John Christian, in a paper in the 1950 Journal of Mammology, is quoted:

> "We now have a working hypothesis for the die-off terminating its cycle . . . In all cases experimentally investigated the mortality is found to be dependent on population density. Social stress can lead to casualties at all ages, both to direct and mortal combat and through stress-induced disease. Cases are known of birds, mammals and amphibians similarly dying from non-specific injuries induced by stress."

Hans Selye, a leading authority today on stress, asserts that stress is a primary cause of disease.

A number of observations and experiments have been made of evidence suggesting cumulative increase of harm from generations of crowding, as with lemmings that after a cycle of crowding continue to die off, even where they reach sparsely settled areas with good food supply. An article in the January 1962 issue of Science by Kim Keeley gives careful laboratory evidence that transmission of harmful influence from crowded mother to unborn infant does indeed take place, even where the infant is brought up by a normal mother in an uncrowded environment. The abstract of his article states

> "Pregnant albino mice were subjected to stress by crowding. When litters encountered unfamiliar stimuli, they were less active, they were slower to respond, and they defecated less than control mice. These differences persisted at 30 and 100 days of age, whether the mice were raised by a crowded or by an uncrowded mother . . . One explanation may be that aberrant endocrine activity in the crowded pregnant female impairs the development of fetal response systems."

With such considerations in mind, this subject was surveyed in 1963 by Dr. Esther Milner of Brooklyn College at the annual meeting of the American Association for the Advancement of Science, she went on to ask,

> "Does population congestion in some way undetermined contribute to the breaking down or distortion of this inter-generation relationship or some form of inheritance? Obviously, if we simply don't care about the kind of society we will become in the future, and the kind of people who will make up that society, there is no point in our being concerned today about the psychological effect of increasing population concentrations upon tomorrow."

There is no reason for thinking that children are not harmed by the effect of high urban stress on their parents through pre-natal and postnatal influences, and no justification for assuming that this effect would not cumulatively increase from generation to generation. Our evidence is that such cumulative harm does take place. It is undoubtedly true that stresses in our large cities tend to be proportionate to size of the city.

Selective Service figures of failure to meet mental requirements of the Armed Services show that among ten states of the northern part of the United States with largest cities the rate of failure was two and a half times the rate of the ten more rural northern states with smaller cities.[5] The smaller states had considerably lower per capita wealth by which to improve mental performance, yet failure was far less.

That some of the developments of pathology are taking place in rural areas is certainly true and is to be expected, from their impoverishment and from the crowding of children in large consolidated schools. For under these circumstances children during the most impressionable period of life are placed in circumstances equivalent to those of the jack rabbit populations we alluded to.

The deteriorating effects of large city living on human urban population are not simple and uniform. In some people this deterioration is masked by their instinctively harboring their depleted nervous and physical resources as by not marrying at all, having no children, or bringing up only one or two children well cared for. These effects of urban living and resultant motivation for birth control were studied by biologists of the English Pioneer Health Center.[6] Their findings reported to the Royal Population Commission, were "that the limitationof families is part of a complex picture of which the physical inadequacy of the individual and the disintegration of his social environment are outstanding features." In other social groups this deterioration may show up in social breakdown among people with a higher birthrate whose children are physically, psychologically and socially unfit for economic and social functions. We see the end results of the latter in the social case loads in many of our large cities, and of the former in the declining numbers of an old elite being overrun by the new middle and upper class that is on the make.

In the past metropolitan populations have had to be replaced by rural migrants at a fairly high rate generation after generation. The dying out of large city peoples would indeed absorb much excess birthrate by virtue of the genocidal effect of large city living. But if this process continues to prevail, there are qualitative effects of this population movement that should be taken into consideration.

As the population is thus crowded into our large cities, a relatively unstable and hopeless hinterland population tends to result, as in the case of Appalachia. Many studies have shown that the hinterland that is left behind after a high degree of urban migration is commonly culturally depressed and economically inpoverished. This process tends to produce a slow but progressive degeneration in the society which has to supply the metropolis with its future population just as would take place in the case of a farmer who butchered his better livestock and bred from those that were left.

To confidently assume that mankind will successfully accommodate itself to large city living when throughout history he has not done so is scientifically untenable and bad statesmanship.

Urban centers have been crucially important to civilization. The question is whether it would not be good public policy to determine what a more optimum balance would be in size of cities in relation to rural areas, and in bringing the values that have been associated with metropolitan centers to smaller and socially more healthy communities in the hinterland. Modern transportation and communication make possible what has hitherto been impossible. We are suggesting that careful study be made to find what types of human association will give the greatest prospect for progressive and enduring rural and small town life. At the same time these rural communities would be an enduring source from which a nation can have its larger cities replace their population.

This paper was originally written for the National Commission on Urban Problems and excerpts from it were published in Volume 5 of its Hearings, p. 380, October 1967, U.S. Government Printing Office.

FOOTNOTES

1. Warren S. Thompson, Plenty of People, Jaques Cattel Press, Lancaster, Pa., 1944, p. 130.

2. Arthur E. Morgan, The Surashtras of Madura: A Self-Sustaining City Population, Community Service News, September-October, 1949.

3. James L. Halliday, M.D., Psychosocial Medicine, New York, 1948, W.W. Norton.

4. Bombay, New Book Company, Ltd., 188 Hornby Road, 1948. Quoted in A Laboratory Case in Urban Survival: The Parsis of Bombay by Arthur E. Morgan. Eugenic News, Vol. 38, No. 1, 1950.

5. Digest of Educational Statistics, U.S. Government Printing Office, 1970.

6. Peckham, Pioneer Health Center, London, August, 1949. Reviewed in Community Service News, September-October, 1949.